

REMARKS

Favorable reconsideration of this application, in view of the present amendments and in light of the following discussion, is respectfully requested.

Claims 1, 20, 27-28, 34, 67 and 69-71 are pending and amended. No new matter is introduced.

In the outstanding Office Action, Claims 1, 20, 27-28, 34, 67 and 69-71 were rejected under 35 U.S.C. § 112, first paragraph; and Claims 1, 3, 20, 27-28, 34, 67 and 69-71 were rejected as being unpatentable over Yu (U.S. Patent Application Publication No. 2003/0105496) in view of Salo (U.S. Patent No. 5,728,140).

Initially, Applicant and Applicant's representatives gratefully acknowledge the courtesy of Examiner Kahelin in holding a personal interview with Applicant and his representatives on June 7, 2011. During the interview, the outstanding issues in this case were discussed as summarized below and in the Interview Summary, which the Examiner has made of record. No agreement was reached pending further search and consideration.

The rejection of Claim 1, 20, 27-28, 34, 67 and 69-71 under 35 U.S.C. § 112, first paragraph, is respectfully traversed. Amended Claim 1 recites, *inter alia*, positioning at least one second pacing electrode of the plurality of pacing electrodes at a position in the right ventricular septum to deliver stimulation to the left ventricle. The outstanding Office Action asserts that this feature is not enabled and fails the written description requirement because the specification does not describe this feature in sufficient detail to allow a person of ordinary skill in the art to make and use the invention.¹

However, Applicant maintains that this feature is adequately described and fully enabled by at least Fig. 4 and paragraphs [0057]-[0058] of the specification as originally

¹ See the outstanding Office Action at pages 2-3.

filed. For example, placing a screw-type electrode in the lower portion of the interventricular septum is described.²

Further, the declaration of Dr. Morton Mower, M.D. (Exhibit A submitted herewith) makes clear that the level of ordinary skill in the art at the time the invention was made was sufficient to determine how to place at least one second pacing electrode of the plurality of pacing electrodes at a position in the right ventricular septum to deliver stimulation to the left ventricle as recited in Claim 1. Specifically, the Declaration identifies several exemplary publications, also submitted herewith, that demonstrate the level of ordinary skill in the art at the time the invention was made. For example, an article by Sodi-Pallares et al., Deductive and Polyparametric Electrocardiography, published in 1970, describes an electrical barrier between the right septal mass and the left septal mass and the existence of regions in the septum where the left septal mass dominates and is near the right septal surface. Another article by Armour et al., Functional Anatomy of the Interventricular Septum, published in 1973, illustrates the thinness of the right ventricle septum relative to the left ventricle septum. Dr. Morton Mower's article, Unusual Patterns of Conduction Produced by Pacemaker Stimuli, describes that right bundle branch block patterns produced in an ECG when pacing from the right ventricle apex of the septum indicate that the pacing pulse preferentially enters the left ventricular septum. Further, the book by Sodi-Palladares et al., New Bases of Electrocardiography, published in 1956, describes that the thickness of the septum is primarily due to the left ventricle and that areas in the right septal surface are formed by the left ventricle.

Thus, the declaration of Dr. Mower, and the articles submitted therewith make clear that one of ordinary skill in the art would sufficiently understand the physiology of the interventricular septum to place an electrode therein as recited in amended Claim 1 when

² See also Figure 4 of the instant application as originally filed.

Claim 1 is read in light of the specification. As such, it is believed that amended Claim 1 fully conforms to the requirements of 35 U.S.C. § 112, first paragraph. Claims 20, 27-28, 34, 67 and 69-71 also conform to the requirements of 35 U.S.C. § 112, first paragraph, for substantially similar reasons. Therefore, it is respectfully requested that the rejection of Claims 1, 20, 27-28, 34, 67 and 69-71 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Turning to the rejection of Claims 1, 3, 20, 27-28, 34, 67 and 69-71 as being unpatentable over Yu in view of Salo, amended Claim 1 is amended to recite a method of configuring signaling locations within a part for performing intrachamber resynchronization that includes:

positioning all of a plurality of pacing electrodes to deliver stimulation to only a left ventricle of the heart, the plurality of pacing electrodes being positioned along a first and second axis interior to the heart, the second axis extending within the left ventricle to position at least one first pacing electrode of the plurality of pacing electrodes thereabout, the first axis extending into a right ventricular septum of the heart to position at least one second pacing electrode of the plurality of pacing electrodes at a position in the right ventricular septum to deliver stimulation to the left ventricle; and

delivering, to the left ventricle, stimulation via the plurality of pacing electrodes to perform the intrachamber resynchronization. (Emphasis added.)

Thus, amended Claim 1 defines that all of a plurality of pacing electrodes are positioned to deliver stimulation to only a left ventricle of the heart, and that the plurality includes at least a first pacing electrode and at least one second pacing electrode. It is believed that no reference cited suggests or discloses this feature.

As discussed in previous responses, Yu describes synchronizing ventricular wall contractions using mechanical measurements.³ Specifically Yu illustrates an accelerometer (142) and an electrode (140) positioned at a free wall of the left ventricle (112), an accelerometer (150) an electrode (148) positioned at a free wall of the right ventricle (108),

³ Yu at paragraph [0013].

and an accelerometer (146) an electrode (144) positioned within the right ventricle adjacent to the septum (109).⁴ Yu describes that each electrode (140, 144, 148) can deliver electrical stimulation to the heart.⁵ In operation, Yu describes that each electrode (140, 144, 148) and each accelerometer (150, 142 and 146) senses heart activity relative to a contraction and that a controller (198) determines an appropriate treatment.⁶

However, Yu does not describe that all pacing electrodes, including at least one electrode in the interventricular septum and at least one second electrode in the left ventricle, pace only the left ventricle. Instead, Yu describes that each electrode, including the electrode (144) located in the right ventricle free wall can deliver stimulation.⁷ Further, Yu describes stimulating the left ventricle using a single electrode (148) located on the free wall of the left ventricle or multiple electrodes located on the free wall of the left ventricle, but nowhere describes stimulating the left ventricle with the electrode (144) on the right-ventricle wall of the septum and electrode (140) on the left free wall of the left ventricle.⁸ In other words, when Yu describes pacing the left ventricle, Yu describes pacing left ventricle using electrodes located only on the free wall of the left ventricle, not electrodes on the interventricular septum. Conversely, amended Claim 1 recites positioning all of a plurality of pacing electrodes to deliver stimulation to only a left ventricle of the heart where at least one second pacing electrode of the plurality of pacing electrodes is positioned at a position in the right ventricular septum to deliver stimulation to the left ventricle. Therefore, Yu fails to disclose the claimed positioning of all of a plurality of pacing electrodes as recited in Claim 1, and Salo does not cure this deficiency in Yu. Accordingly, no combination of Salo and Yu describes every feature recited in amended Claim 1, and amended Claim 1 is believed to be in condition for allowance, together with those claims depending therefrom.

⁴ Yu at paragraph [0027]; see also Figure 3.

⁵ Yu at paragraphs [0028]-[0030].

⁶ Yu at paragraph [0035] and paragraphs [0047]-[0055].

⁷ Yu at paragraph [0030].

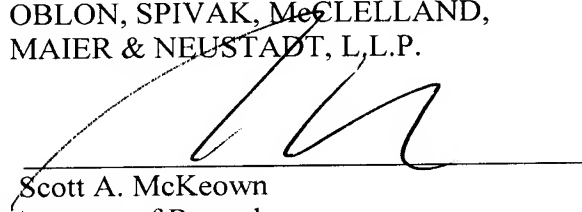
⁸ See, for example, Yu at paragraphs [0047] and [0055].

As amended Claim 67 recites features substantially similar to those recited in amended Claim 1, amended Claim 67 is also believed to be in condition for allowance together with any claim depending therefrom. Accordingly, it is respectfully requested that the rejection of Claims 1, 3, 20, 27-28, 34, 67 and 69-71 under 35 U.S.C. § 103(a) be withdrawn.

For the reasons above, no further issues remain outstanding in the present application and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance for Claims 1, 20, 27-28, 34, 67 and 69-71 is earnestly solicited.

Respectfully submitted,

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